REMARKS/ARGUMENTS

Rejections under 35 USC § 112

Claims 1-23 were rejected under 35 USC 112, second paragraph, since no proper antecedent basis is provided for the phrase "the multi-wavelength photonic modulator". That phrase in claim 1 has been amended to read "said multi-wavelength photonic oscillator" which is used in the claim preamble. With this amendment this ground for rejection has been overcome.

The Prior Art Rejections under 35 USC § 102

The Examiner asserts that the patent (US 6,661,974) by Akiyama anticipates claims 1, 6 and 11. Claim 1 is directed to a "multi-wavelength photonic oscillator". Akiyama does not teach how to make an oscillator. Rather, Akiyama teaches an optical transmitter which compensates for wavelength dispersion. Claim 1 has been amended to recite that the feedback loop has a loop gain greater than unity, a common requirement for oscillators. The Examiner seems to believe that it is common for all feedback loops to have a loop gain greater than unity (see the commentary on page 6 of the official action). Loop gains greater than unity are common for oscillators, but that does not mean that it is obvious to make the loop gain of each and every feedback loop greater than unity. Quite to the contrary, many feedback loops are used for control purposes and having a feedback loop trigger oscillation in a control system is about the last thing in the world that a designer of the control system would want. Akiyama teaches a control system which compensates for wavelength dispersion in an optical transmitter. Having a feedback loop gain greater than unity is not something that a person skilled in the art would do with the Akiyama control system.

New claim 38 recites that the electronic loop portion provides "an electrical input for the optical modulator". In Akiyama no such input is provided.

Claims 6 and 11 were rejected with the Examiner apparently asserting that the recited optical tap is met by Akiyama's optimum-wavelength detector (dispersion monitor) 40. But such a construction of these claim is utterly inconsistent with how the optical tap is defined in claim 1 (from which these claims depend).

Claims 1, 6 and 11 (and their dependent claims) are patentable over Akiyama.

The Prior Art Rejections under 35 USC § 103

The Claims dependent on claim 1

Claim 11 is patentable over Akiyama at least by its dependancy on claim 1 and also for the reasons noted above. The other dependent claims are patentable over the cited art. The Examiner points to nothing in Desurvire which addresses the shortcomings of Akiyama noted above.

Claims 24 and 31

The Examiner also rejects claims 24 and 31 as being obvious over Katagiri (US 7,050,723) in view of Graves (US 7,079,772) and further in view of Wagner (US 5,450,223). This grounds for rejection is respectfully traversed.

Katagiri relates to technology for scrambling optical signals, which can be used in reliable optical communication systems. The Examiner points to Katagiri's figure 2 and asserts that it would be obvious to replace Katagiri's laser oscillators 20 with Graves multi-wave length photonic oscillator which the

Examiner identifies by the numeral 100 and which the Examiner asserts has multiple modulations side bands by referring to fig. 3b of Graves. The motivation for doing this this, applicant is told, is "to reduce cost and enhance controllability". With add due respect, the applicant disagrees.

First, the applicant disagrees with the characterization given Graves. Graves' multi-wavelength length photonic oscillator which the Examiner identifies by the numeral 100 does <u>not</u> produce "an optical output comprising multiple optical carriers and multiple modulation sidebands, said multiple optical carriers and multiple modulation sidebands being grouped into more than one wavelength region with the optical output at each wavelength region comprising at least an optical carrier and a modulation sideband" as claimed by claims 24 and 31. Note the legend on Fig. 1 of Graves where "unmodulated" signals are shown by dashed lines and note the dashed lines emanating from element 100. Note also the paragraph bridging columns 5 and 6 of Graves. Element 100 of Graves produces <u>unmodulated</u> signals. And most of the Graves disclosure is about how to produce these unmodulated signals (note col. 6, ll. 37-39 of Graves). The Examiner's suggestion that Fig. 3b of Graves shows "modulation side bands" appears to be in error. If the Examiner disagrees, then the Examiner is respectfully requested to show where Graves specifically teaches that modulation side bands occur in his unmodulated signals emanating from element 100.

Second, the Applicant notes that Graves does teach modulating his signals with data using access multiplexers 110. See col. 5, ll. 13-18. These signals are applied to a "photonic switch node 120" which does not seem to be described in any detail whatsoever. Of course, that is understandable given Graves' emphasis of disclosure with reference to "unmodulated" signals (recall

that Graves spends many figures teaching how to produce unmodulated signals).

Third, even if is assumed that the Examiner can overcome the problems with Graves noted above, note that Graves modulates his signals with data in elements 110 and that Katagiri modulates his signals with data in elements 21. Why would someone skilled in the art apply data-modulated signals from Graves to Katagiri's optical modulators 21 (which are also modulated by data)? Would not that arrangement just cause a lot of complication and distortion related problems rather than "reduce cost and enhance controllability" as asserted by the Examiner?

<u>New Claims</u>

New claims 38 - 40 are added by this response. Claim 38 recites that the electronic loop portion provides an electrical input for the optical modulator. For support, see Fig. 1 and its description. Note the outputs of the photodetectors 110, 112 drive the modulator 106 via an amplifier 118 and a bandpass filter 116. Claims 39 and 40 recite that the modulation sidebands are frequency fixed relative to their carriers. For support, note the disclosure of the use of tones to amplitude modulate the carriers, which result in the sidebands being frequency fixed relative to their carrier as is well known in this art. See Figures 5a - 5c.

<u>Allowable Subject Matter</u>

The Examiner is again thanked for the indication of allowable (or allowed) subject matter in terms of claims 18-23, 25-28 and 32-35. However, for the reasons given, it is believed that all of the claims pending in this application are allowable over the cited art.

Withdrawal of the rejections and allowance of the claims are respectfully requested.

* * *

The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account no. 12-0415. In particular, if this response is not timely filed, then the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136 (a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

I hereby certify that this paper (and any enclosure referred to in this paper) is being transmitted electronically to the United States Patent and Trademark Office on

April 21, 2008
(Date of Transmission)

Stacey Dawson
(Name of Person Transmitting)

/Stacey Dawson/
(Signature)

April 21, 2008
(Date)

Respectfully submitted,

/Richard P. Berg 28,145/

Richard Berg
Attorney for the Applicant
Reg. No. 28,145
LADAS & PARRY
5670 Wilshire Boulevard
Suite 2100
Los Angeles, CA 90036
(323) 934-2300 voice
(323) 934-0202 facsimile